

# Milwaukee Water Works

*Safe, Abundant Drinking Water.*

## Safe Drinking Water Report



The Milwaukee Water Works serves pure, safe drinking water to Milwaukee and 15 other communities in southeastern Wisconsin. These communities are:

Brown Deer	Hales Corners	St. Francis
Butler	Menomonee Falls	Thiensville
Franklin	Mequon	Wauwatosa
Greendale	New Berlin	West Allis
Greenfield	Shorewood	West Milwaukee

**Milwaukee's pure, safe drinking water is a great value.  
Five gallons cost one cent. 1 Ccf (Ccf=hundred cubic feet)  
or 748 gallons, cost \$1.34.**

Milwaukee's drinking water quality meets or exceeds all state and federal health standards.

Since 1998, the Milwaukee Water Works has invested \$227 million in its infrastructure, from treatment plants to distribution systems, to ensure high quality drinking water and reliable supply. The water treatment process uses ozone gas as a primary disinfectant. Ozone destroys microorganisms that cause disease. It also reduces chlorinated disinfection byproducts and removes taste and odor. Coagulation, settling, biological filtration, and a final disinfection ensure high quality water throughout the distribution system and at your faucets.

The Milwaukee Water Works tests source and treated drinking water for over 500 contaminants even though the EPA requires tests for only 90. The monitoring is done as a precaution to ensure safe water and to collect baseline data for study and to meet future regulations. Milwaukee was one of the first utilities in the U.S., starting in 2004, to test source and drinking water for endocrine-disrupting compounds (EDCs) and in 2005, to test for pharmaceuticals and personal care products (PPCPs). None have been found in Milwaukee drinking water. Neither testing nor disclosure of results is required under the Safe Drinking Water Act.



The Milwaukee Safe Drinking Water Report is a service of the Milwaukee Water Works, a national leader in providing safe, high quality drinking water and monitoring water quality. In this report, you will find:

- Information about the source of your drinking water
- The treatment process that ensures the highest quality water
- Results of water quality testing and compliance with water quality laws
- Additional educational information

The U.S. Environmental Protection Agency (EPA) requires drinking water utilities to provide an annual Consumer Confidence Report to help consumers understand where their drinking water comes from so they can make informed decisions about their health and protection of the environment.



**Milwaukee tap water delivers public health protection, fire suppression, support for the economy and contributes to our quality of life.**

The utility is a self-financing enterprise owned by the City of Milwaukee. Water quality, operations, and rates are regulated by the Public Service Commission of Wisconsin (PSC), the EPA, and the Wisconsin Department of Natural Resources (DNR).

The table below shows the regulated contaminants detected in Milwaukee's drinking water during 2009. All are below levels allowed by state and federal laws. The table contains the name of each substance, the highest level allowed by regulation (Maximum Contaminant Level, or MCL), the ideal goals for public health (Maximum Contaminant Level Goal, or MCLG), the amount detected, the usual sources of such contamination, and footnotes explaining the findings and

units of measurement. The presence of a substance in drinking water does not necessarily indicate the water poses a health risk. Certain quantities of some substances are essential to good health, but excessive quantities can be hazardous. A list of the hundreds of other compounds tested for but not detected in the Milwaukee water quality monitoring program can be found at <http://www.milwaukee.gov/water/about/WaterQuality.htm>

Substance	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Median Value	Highest Level Detected	Source(s) of Contaminant
Aluminum	0.2 mg/L	NR	0.045 mg/L	0.309 mg/L	Water treatment additive; Natural deposits
Barium	2 mg/L	2 mg/L	0.021 mg/L	0.021 mg/L	Natural deposits
Bromate	10 µg/L	10 µg/L (RAA)	4 µg/L (RAA)	NR	Byproduct of drinking water disinfection
Chlorine, total	4 mg/L	4 mg/L	1.40 mg/L	1.95 mg/L	Residual of drinking water disinfection
Chromium	100 µg/L	100 µg/L	< 2 µg/L	2 µg/L	Natural deposits
Copper (2008)	1.3 mg/L	1.3 mg/L (AL)	0.056 mg/L (AL)	NR	Corrosion of household plumbing systems
Fluoride	4 mg/L	4 mg/L	0.77 mg/L	2.06 mg/L	Water treatment additive; Natural deposits
Haloacetic Acids, total	NA	60 µg/L	1.2 µg/L	9.4 µg/L	Byproduct of drinking water disinfection
Lead (2008)	Zero	15 µg/L (AL)	5.3 µg/L (AL)	NR	Corrosion of household plumbing systems
Organic Carbon, total	TT	TT	1.3 mg/L	2.6 mg/L	Natural deposits
Potassium	NR	NR	1.4 mg/L	1.6 mg/L	Natural deposits
Radium, combined (2008)	Zero	5 pCi/L	0.99 pCi/L	1.1 pCi/L	Natural deposits
Sodium	NR	NR	9.3 mg/L	17.3 mg/L	Natural deposits
Sulfate	500 mg/L	NR	28 mg/L	32 mg/L	Natural deposits
Trihalomethanes, total	NA	80 µg/L	3.6 µg/L	10.4 µg/L	Byproduct of drinking water disinfection
Turbidity	NA	<0.3 NTU 95% of the time	0.04 NTU 95% of the time	0.08 NTU 1-day max	Natural deposits
Uranium, total (2008)	Zero	20 pCi/L	0.14 pCi/L	0.18 pCi/L	Natural deposits

## Definitions

< "less than" or not detected

**AL** Action Level; the concentration of a contaminant that when exceeded, triggers treatment or other requirement that a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.

**Haloacetic Acids** Mono-, di-, and tri-chloroacetic acid; mono- and di-bromoacetic acid; and bromochloroacetic acid

**Median** The middle value of the entire data set for the parameter (range from high to low)

**µg/L** microgram per liter or parts per billion

**mg/L** milligram per liter or parts per million

**NA** Not applicable

**NR** Not regulated

**NTU** Nephelometric Turbidity Unit – unit to measure turbidity

**pCi/L** Picocuries per liter, a measure of radioactivity. A picocurie is 10<sup>-12</sup> curies.

**RAA** Running Annual Average – The average of four (4) quarterly samples collected in one year

**TT** Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water

**Trihalomethanes** Chloroform, bromochloromethane, dibromochloromethane and bromoform

### Important Information

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

### Información importante para nuestros clientes que hablan español

Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo o hable con alguien que lo entienda bien.

### Lug tseem ceeb rua cov siv dlej kws has lug Moob

Ntawm nuav yog cov lug tseem ceeb qha txug kev haus dlej nyob nroog Milwaukee. Yog mej nyem tsi tau cov lug nuav, thov lwm tug txhais rua mej.

## Source of Milwaukee's Drinking Water

The source of Milwaukee's drinking water is Lake Michigan, a surface water source. As water flows through rivers and lakes and over land surfaces, naturally occurring substances may be dissolved in the water. The substances are called contaminants. Surface water sources may be highly susceptible to contaminants. Surface water is also affected by animal and human activities. A Wisconsin DNR Source Water Assessment for Milwaukee is available on the Internet: [www.dnr.state.wi.us/org/water/dwg/swap/surface/milwaukee.pdf](http://www.dnr.state.wi.us/org/water/dwg/swap/surface/milwaukee.pdf)

Contaminants that may be present in source water include microbial contaminants, such as viruses, protozoa and bacteria; inorganic contaminants such as salts and metals; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants.

To ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Learn more about contaminants and potential health effects by calling the EPA Safe Drinking Water Hotline, **1-800-426-4791**.

## Information for Persons with Compromised Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline, **1-800-426-4791**, and the Centers for Disease Control (CDC) [www.cdc.gov](http://www.cdc.gov)

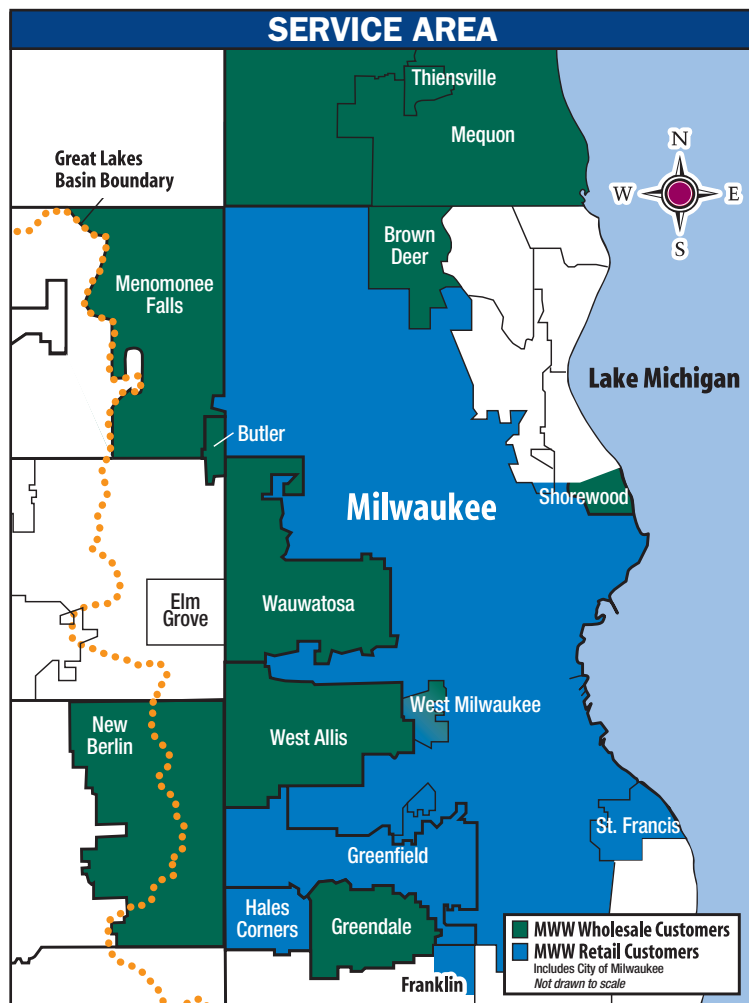
## Cryptosporidium

*Cryptosporidium* is a microscopic protozoan that when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. The Milwaukee Water Works and the Milwaukee Health Department consider *Cryptosporidium* detection a priority, and since 1993, have continued to test the untreated and treated water for *Cryptosporidium*. The organism is found in many surface water sources (lakes, rivers, streams) and comes from human and animal wastes in the watershed. The risk of *Cryptosporidium* from drinking water in Milwaukee has been reduced to extremely low levels by an effective treatment combination including ozone disinfection, coagulation, sedimentation, biological filtration, and chloramine disinfection.

The City of Milwaukee Health Department has prepared a pamphlet based on EPA and CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*. Copies of this pamphlet are available from the Milwaukee Health Department, **(414) 286-3521**. Or, view a copy in English or Spanish at [www.milwaukee.gov/healthywater](http://www.milwaukee.gov/healthywater) and click on Air/Water/Toxics.

## Lead and Copper

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Milwaukee Water Works is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, **1-800-426-4791** or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead)





## Contact Information

### Milwaukee Water Works

841 N. Broadway, Room 409, Milwaukee, Wisconsin 53202  
Customer Service Center  
Open Monday-Friday, 7:30 a.m. to 5 p.m.  
Phone (414) 286-2830 ■ TDD (414) 286-2025  
Fax (414) 286-2672

24-Hour Water Control Center (414) 286-3710

Email for non-emergency contact:  
[watwebcs@milwaukee.gov](mailto:watwebcs@milwaukee.gov)

Please visit the Milwaukee Water Works website,  
[www.milwaukee.gov/water](http://www.milwaukee.gov/water)  
Para una explicación en español, por favor llame al (414) 286-2830.

### City of Milwaukee Health Department

[www.milwaukee.gov/health](http://www.milwaukee.gov/health)

### U.S. Centers for Disease Control

[www.cdc.gov](http://www.cdc.gov)

### U.S. Environmental Protection Agency

[www.epa.gov/safewater/dwh/index.html](http://www.epa.gov/safewater/dwh/index.html)

### Wisconsin Department of Natural Resources

[www.dnr.state.wi.us](http://www.dnr.state.wi.us)

### Public Service Commission of Wisconsin

[www.psc.wi.gov](http://www.psc.wi.gov)

### American Water Works Association

[www.drinktap.org](http://www.drinktap.org)

### Participate in Water Decisions

You may attend any of the following meetings

- The Public Works Committee of the Milwaukee Common Council
- The Milwaukee Common Council – call **(414) 286-2221** or visit [www.city.milwaukee.gov](http://www.city.milwaukee.gov)

## Use Water Wisely — Control Water Costs

As your drinking water provider, we work to control costs by eliminating leaks in our treatment and distribution systems. Leaks inside homes and businesses are the responsibility of the property owner. You can control your water costs by finding and fixing household leaks.

Leaks waste very large amounts of water. A toilet that "keeps running" or a dripping faucet can waste hundreds of gallons in one month.

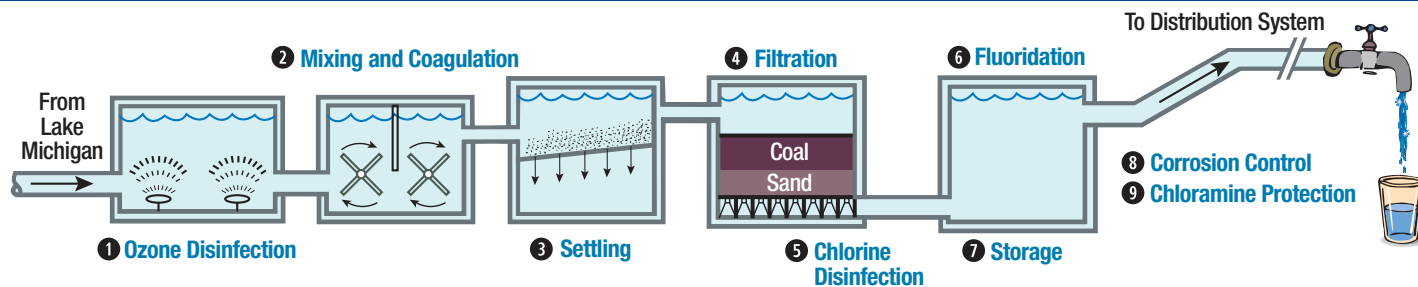
Wasted water costs add up. The City of Milwaukee Local Sewerage Charge and the Milwaukee Metropolitan Sewerage District (MMSD) Sewer Treatment Usage Charge are based on the amount of water that passes through your water meter, whether you consumed the water or it leaked and was wasted. A toilet that overflows one gallon every five minutes will waste 288 gallons per day, costing you \$129.00 each billing quarter in water and city and MMSD sewer charges.

Check and compare through the year how much water you use at home each quarter online at [www.milwaukee.gov/water](http://www.milwaukee.gov/water) *Account Information*. The average single family home in Milwaukee typically uses 19 Ccf of water per billing quarter (14,212 gallons). If you use much more than 19 Ccf per quarter, you may have water leaks.

Most leaks are easy to repair with parts from your local hardware store. Ask for assistance in choosing the correct parts. Or, call a professional plumber for help. Visit our website for complete information about finding and fixing leaks. [www.milwaukee.gov/water](http://www.milwaukee.gov/water).

The Milwaukee Water Works is collaborating with Clean Wisconsin to assist with reducing wasted water and conserving our valuable water resource.

## Milwaukee Water Works Drinking Water Treatment Process



**1. Ozone Disinfection** — Ozone gas is bubbled through the incoming lake water. Ozone destroys disease-causing microorganisms including *Giardia* and *Cryptosporidium*, controls taste and odor, and reduces chlorinated disinfection byproducts.

**2. Mixing and Coagulation** — Very fine particles in the water adhere together to form larger particles as the coagulant alum is mixed into the water. Large particles are more effectively removed during the settling and filtering processes.

**3. Settling** — Settling is the process in which solid particles settle out and are removed from the water.

**4. Biologically Active Filtration** — The water is slowly filtered through 24" of anthracite coal and 12" of crushed sand to remove very small particles.

**5. Chlorine Disinfection** — After filtration, chlorine is added as a secondary disinfectant. This provides extra protection from potentially harmful microorganisms.

**6. Fluoridation** — Fluoride, when administered at low levels, is proven to help prevent tooth decay.

**7. Storage** — Treated water is stored in deep underground tanks and pumped as needed through the distribution system.

**8. Corrosion Control** — A phosphorous compound is added to help control corrosion of pipes. This helps prevent lead and copper from leaching from plumbing into the water.

**9. Chloramine Protection** — Ammonia changes the chlorine to chloramine, a disinfectant that maintains bacteriological protection in the distribution system.

*The Milwaukee Water Works is a member of the American Water Works Association, the Association of Metropolitan Water Agencies, the Water Research Foundation, and the Wisconsin Water Association.*